III. Management and Administration

The following section asks a number of fundamental questions about management capacity and capability, because water systems, whether publicly or privately owned, are enterprises that must be operated by a set of rules and procedures, like any business. Smaller, non-urban water systems are management intensive, in the sense that they require the care and attention of dedicated managers who must divide their time among many functions—rate management, personnel decisions, SDWA compliance, financing, public information, operations and maintenance, safety management, record keeping, and even emergency response planning.

A. System Sampling and Testing

Finished water must be sampled to check for contamination. Performance of required water sampling demonstrates compliance with the drinking water regulations. In addition systems sample water for process control. Process control sampling enables operators and managers to identify and correct potential problems before they negatively affect water quality.

1. Regulatory Compliance

Complete the following table with information related to the regulatory compliance sampling you perform.

Test Parameter(s) Required	Laboratory Used	Frequency of Test (per year)	Cost of Test	Total Yearly Cost

1(a). How many violations of the Safe Drinking Water Act did the system record during the last 12 months? Specifically, what were those violations? Did any require public notification?

1(b). Briefly describe your system's annual Consumer Confidence Reports. What is the format and delivery method (e.g., mail, newspaper)? Give the date the last such report was issued.

1(c). Has the state regulatory agency that monitors and inspects public drinking water supplies imposed any special sampling or testing requirements on your system? What are they? Why were they imposed?

2. Process Control

Complete the following table with information related to the process control sampling you perform.

Test Parameter(s)	Sample Locations	Frequency of Tests	Problems Indicated

2(a). Is the process control test program adequate to allow troubleshooting and performance optimization of each unit process?

B. Preventive Maintenance Management

Effective preventive maintenance enables operators and managers to avoid the problems that occur when equipment fails or operates inefficiently. Additionally a properly planned and managed preventive maintenance program, including appropriate building and grounds maintenance, reduces the likelihood of accidents and costly unplanned repairs.A quality maintenance program requires adequate staffing and budgeting, but reaps many long-term benefits for the utility system.

1. Is there a documented PM program in use which covers the following:
   a. Sources? _____
   b. Treatment? _____
   c. Storage? _____
   d. Pumping? _____
   e. Distribution? _____

2. Describe the type of PM program being utilized (e.g., card file, computer-based).

3. Is the PM schedule in accordance with manufacturers' recommendations? If not, explain how PM is scheduled.

4. In general, what PM is conducted by:

   a. In-house staff?
      _____

   b. Outside contractors?
      _____

5. Is an inventory of critical spare parts maintained?

6. Are PM tasks scheduled and performed on a priority system? Please explain how this is done.

7. Is there a backlog of priority PM tasks that have not yet been accomplished? If so, explain what they are and why they not yet been accomplished (e.g., lack of personnel, lack of resources).

C. Safety

Safety must be actively and aggressively managed. Every water system should have a minimum of 24 hours of safety training annually, and attendance should be mandatory. Every employee should be trained to spot and remove hazards, use tools safely, effectively put on and use PPE, and generally respect all unavoidable threats to his/her personal safety—stray electricity, slippery floors, inadequate tools, fire, etc.

1. Has an official safety policy statement been endorsed by the top management of the utility?

   _____
   _____
   _____
   _____

2. Are employees trained and retrained in proper safe work practices? Give specific examples.

   _____
   _____
   _____
   _____

3. Are all accidents and injuries thoroughly investigated to determine their cause, and are accident reports kept on file for at least 10 years?

   _____
   _____

4. Does the utility have a hazard communication program that complies fully with Worker Right-to-Know laws?

   _____
   _____
   _____
   _____

5. Are employees supplied with all necessary Personal Protection Equipment (PPE) before undertaking hazardous duties? Give examples.

_____
_____
_____
_____

6. Is there a Confined Space Entry training program? Who does the training, and what are the trainers' specific qualifications?

_____
_____
_____
_____

7. Is there a vehicle safety and driver training program? How many hours? Taught by whom?

_____
_____
_____
_____

8. Has the Occupational Safety and Health Administration, or its state equivalent, ever inspected the water plant? Why? Summarize the agency's report.

_____
_____
_____
_____

9. Are Material Safety Data Sheets for all hazardous materials in use at the plant readily available to all employees?

_____
_____
_____
_____

10. When was the last lost time accident involving a system employee? Outcome? Workers' Compensation eligible? Cause?

11. Does the facility have a Traffic Control program in place?

12. Does the facility have a Lock-Out/Tag-Out program in place?

13. Does the facility have an Excavation Safety program in place?

14. Are appropriate records kept to document training in proper safe work practices? Give specific examples.

D. Emergency Operations

Increases in civil disorder, vandalism, terrorism, toxic spills and employee strikes, as well as the ever present danger of natural calamities, all suggest that detailed contingency planning be made an integral part of the utility management function. Indeed, some state regulatory agencies now require the creation and annual updating of Emergency Operating Plans for all public water supply systems. Preparation for any of these risks should be the specific obligation of every utility manager. At a minimum you must identify the key system components, or resources, whose loss during an emergency would be primarily responsible for system failure. If the risk is high, these components must have back-up (redundancy).

1. Has the utility completed a vulnerability assessment of its source water and associated hardware, treatment plant and distribution network? Where is the report?

   _____
   _____
   _____
   _____

2. Are there specific, written plans of action for responding to risks of danger to the system? Where are these emergency response plans? Has response been coordinated with local law enforcement, Civil Defense agencies, and other public safety organizations?

   _____
   _____
   _____
   _____

3. Is the utility able to connect to another water system during emergencies, thereby preserving service? Where is the interconnection, and how is it implemented?

   _____
   _____
   _____
   _____

4. Is the system's on-site electrical generating capacity sufficient to power the system during extended loss of electrical service?

_____
_____
_____
_____

5. Is there a sufficient store of supplies and materials (chemicals, lubricants, etc.) to carry the utility during an extended emergency?

_____
_____
_____
_____

E. Cross-Connection Control Program

Cross-connections between potable and non-potable water pose a significant risk to health and must be prevented through the implementation of an effective cross-connection control program. Periodic sanitary surveys and appropriate correction of deficiencies can prevent the risk of contamination of drinking water because of cross-connections.

1. Is a written cross-connection control program in place? If so, is it enforced?

_____
_____

2. Are backflow preventers at treatment plants and other facilities owned by the community tested regularly?

_____
_____

How often?

_____
_____

By a certified tester?

_____
_____

3. Is there a program to control the use of fire hydrants to prevent pressure reduction and corresponding potential contamination problems?

   _____

   _____

F. Conservation Programs

Utilities should implement and encourage water conservation measures. Water is a limited resource, and drought and overuse have created water shortages in many areas. Each water system has a limited capacity to treat and serve water. Energy costs to pump water out of deep aquifers can be a huge burden for water systems. Reducing water use enables systems to conserve their resources for withdrawing, treating, and delivering finished water. This usually translates into lower water costs for consumers also.

1. Does the facility have a water conservation program in effect? If so, what are the annual water savings? How could the program be improved to increase the amount of water savings? (Document in cost savings or gallons reduced.)

2. Does the facility have an energy conservation program in effect? If so, what are the annual energy savings? How could the program be improved to increase the amount of energy savings? (Document in cost savings or kWh reduced.)

G. Organization and Staffing

Workforce stability within publicly-owned utility systems traditionally has been lacking, due probably to the generally lower salaries paid in the public sector. One technique for procuring and keeping good employees is to maintain a reliable organization and staffing system, where productive employees are rewarded with salaries comparable to those paid by other progressive communities, where personnel policies are open and well known, and above all fairly administered, and where each individual understands his or her role in the overall organizational scheme of the system.

1. Is there a written organization and staffing plan, with a clearly defined chain of command and reporting protocol?

   _____
   _____
   _____
   _____

2. Does each of the job slots identified in the staffing plan have a written position description?

   _____
   _____
   _____
   _____

3. Are all of the individuals holding positions which call for state certification or licensing correctly certified? If not, are they in the process of becoming certified? If not, why?

   _____
   _____
   _____
   _____

4. Are there written employment policies and procedures, covering (a) compensation, (b) hiring policies, (c) training and certification, (d) discipline and appeal procedures, (e) employee performance evaluations, (f) assignment of shifts, and (g) personnel records management?

   _____
   _____
   _____
   _____

5. If a collective bargaining agreement is in force, do you know when it is due to be renegotiated, and who is covered by it?

_____
_____
_____
_____

H. Long-Term Planning

System management needs to guard against short-sightedness. It is important to consider issues like future demand, inflation, equipment replacement needs, and revenue requirements when making long-term plans. Long-term planning will help to ensure that your utility can meet your community's needs for a safe and adequate water supply.

1. Is life cycle planning adequate to prevent the failure of any critical system component? ("Life cycle planning" means looking at an asset throughout its useful life. For example, how many years can you expect the item to last? When will maintenance be necessary? Can maintenance be performed when it does become necessary? Are there funds set aside to replace the asset when it does ultimately fail?)

2. Is the capacity of the system regularly evaluated to determine if it is capable of addressing growth of the community?

3. Is system planning adequate to address future state and federal regulations?

I. Public Relations

The public's perception of a utility often determines how that utility will be treated at budget time. Good public relations are the result of consistent and well thought out ***outreach*** *to a system's customers—deliberate efforts to interest them in supporting the utility politically and financially. This effort must be cleverly planned and managed.*

1. Are there clear and written policies for dealing with the media, particularly during emergencies? Has staff been trained on those policies?

   _____
   _____
   _____
   _____

2. Are there clear, written policies and procedures for receiving and responding to customer complaints and other communications from the public?

   _____
   _____
   _____
   _____

3. Are there ongoing efforts to train system staff in how to project a good public image on behalf of their utility? Briefly describe.

   _____
   _____
   _____
   _____
   _____

4. Are system telephone numbers and other contact information clearly displayed on bills, newsletters and other public documents?

   _____
   _____
   _____
   _____

5. Is there a newsletter? Do senior staff undertake public speaking engagements on behalf of the utility? Are plant tours offered for school and other groups? Are there public meetings at which customers may ask questions about operations and SDWA compliance, particularly in response annual Consumer Confidence Reports?

_____
_____
_____
_____

J. Record Keeping

Effective utility management virtually demands an accurate and reliable record keeping system, both to satisfy legal requirements and to be able to manage responsibly. Good records can save time when trouble develops and stand as proof that problems were identified and resolved. A treatment plant can only be well run when its operating records are used as the basis for process decisions, and when maintenance records are used for preparing future preventive maintenance cost estimates. If there are legal questions about the operation of the plant, accurate and complete records will provide evidence of what actually took place, what procedures were followed and who was in charge. Finally, good operating records provide an excellent basis for the design of future expansions, or other changes to the system. They are indispensable.

1. Are there up-to-date equipment maintenance records, with associated work orders and equipment control cards, which clearly show the make, model and maintenance history of each piece of plant equipment?

_____
_____
_____

2. Are plant operations logs up to date, and do they record all the significant daily and monthly operating records required by law for a water treatment and distribution utility?

_____
_____
_____

3. Are requisitions and purchase orders used for procurement of repair parts and supplies, and are copies of these procurement documents kept on file for at least two years after receipt of the purchased items?

_____
_____
_____
_____

4. Is there a record system for parts and supplies in inventory? Does the system show how often a particular item or part is needed, so that costs can be held down by only keeping on hand only the quantity for which a demonstrated need exists, or those which are vital in an emergency?

_____
_____
_____
_____

5. Does the personnel record system adequately document every personnel action taken on behalf of, or against, employees, thus providing a complete chronological record of an individual's accomplishments and commendations, formal performance reviews, certifications earned, written warnings and disciplinary actions, injury and accident reports, and training attended? Are documents accounting for time worked adequate to review and assess current and future staffing needs?

_____
_____
_____

Summary of System Management and Administration

This section is meant to help you evaluate and prioritize the challenges faced by the system's management and administrative resources. Looking back at the information you provided in preceding section and what you know of the system, summarize defects and deficiencies noted above and then prioritize them according to their justified need. Using the ranking system provided below, complete the table found on the following page.

*Priority Ranking System**

1 =	Issue presents an imminent threat to public health or safety OR issue presents a current Safe Drinking Water Act compliance problem
2 =	Issue presents a potential or future threat to public health or safety OR issue presents a potential or future Safe Drinking Water Act compliance problem
3 =	Issue impacts negatively or could impact negatively system performance or efficiency, but does not present an immediate threat to public health, safety, or compliance with the SDWA
4 =	Issue presents a future threat to the long-term capacity of the system

*Note: Although an issue might be categorized as a "3" or "4" priority today, you can be sure that it will become a higher priority at some point in the future. It is wise to fix these problems sooner rather than later, when more may be at stake and it might cost more to fix.

Summary of System Management and Administration

ACTION ITEM	PROBLEM / CONCERN	CORRECTIVE ACTION REQUIRED	COST	OTHER RESOURCES REQUIRED	PRIORITY *(see ranking system)*

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